

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claims 1-15 (cancelled).

Claim 16 (previously amended): A downhole submersible pumping system, comprising:

a motor;

production tubing; and

a first pumping assembly coupled to the motor and production tubing, wherein the first pumping assembly includes at least one stage that is configured to produce a diagonal flow path, a plurality of turbomachinery stages configured to produce a diagonal flow path, and at least one turbomachinery stage configured to produce a non-diagonal flow path.

Claim 17 (cancelled).

Claim 18 (new): The downhole submersible pumping system of claim 16, further comprising a second pump assembly coupled between the first pumping assembly and the production tubing, wherein the second pump assembly is configured to produce radial flow profiles.

Claim 19 (new): The first pumping assembly of claim 16, wherein the stage that is configured to produce a diagonal flow path includes an impeller and a diffuser.

Claim 20 (new): The first pumping assembly of claim 16, the stage configured to produce a diagonal flow path comprising:

an impeller assembly; and

a diffuser assembly, the diffuser assembly comprising:

a diffuser hub having a diffuser hub profile, wherein the diffuser hub profile is

formed by the revolution of a first line segment that is inclined to the

longitudinal axis of the first pumping assembly; and

a diffuser shroud having a diffuser shroud profile.

Claim 21 (new): The first pumping assembly of claim 20, wherein the diffuser shroud profile is formed by the revolution of a second line segment not parallel or co-linear to the first line segment that is inclined to the longitudinal axis of the first pumping assembly.

Claim 22 (new): The first pumping assembly of claim 20, wherein the diffuser assembly further comprises a thrust washer.

Claim 23 (new): The first pumping assembly of claim 16, the stage configured to produce a diagonal flow path comprising:

an impeller assembly, the impeller assembly comprising:

an impeller hub having an impeller hub profile, wherein the impeller hub profile is formed by the revolution of a third line segment that is inclined to the longitudinal axis of the first pumping assembly; and  
an impeller shroud line having an impeller shroud line profile; and  
a diffuser assembly.

Claim 24 (new): The first pumping assembly of claim 23, wherein the impeller shroud line profile is formed by the revolution of a fourth line segment that is inclined to the longitudinal axis of the first pumping assembly.

Claim 25 (new): The first pumping assembly of claim 23, wherein the impeller assembly further comprises a balance hole.